

Title (en)

SYNTHESIS OF N-(2,4-DINITROPHENYL)-4-NITROBENZAMIDE (TNBA) USING SOLID ACID CATALYSTS

Title (de)

SYNTHESE VON N-(2,4-DINITROPHENYL)-4-NITROBENZAMID (TNBA) UNTER VERWENDUNG VON FESTEN SÄUREKATALYSATOREN

Title (fr)

SYNTHÈSE DE N-(2,4-DINITROPHÉNYL)-4-NITROBENZAMIDE (TNBA) À L'AIDE DE CATALYSEURS ACIDES SOLIDES

Publication

EP 4165014 B1 20240529 (EN)

Application

EP 21736468 A 20210608

Priority

- US 202063037834 P 20200611
- US 2021036296 W 20210608

Abstract (en)

[origin: US2021387942A1] A method of making N-(2,4-dinitrophenyl)-4-nitrobenzamide from a mixture of 2,4-dinitroaniline, 4-nitrobenzoyl chloride, and solid acid catalyst in an organic solvent, wherein the solid acid catalyst is not soluble in the organic solvent, the solid acid catalyst being an acidic clay, an ion exchange resin, a beta zeolite, a sulfonated tetrafluoroethylene-based fluoropolymer-copolymer, or some mixture of these.

IPC 8 full level

C07C 231/02 (2006.01); **C07C 233/66** (2006.01)

CPC (source: EP KR US)

B01J 8/006 (2013.01 - KR); **B01J 8/02** (2013.01 - US); **B01J 8/04** (2013.01 - KR); **B01J 19/14** (2013.01 - US); **B01J 21/16** (2013.01 - US); **B01J 29/7007** (2013.01 - US); **B01J 39/20** (2013.01 - US); **C07C 231/02** (2013.01 - EP KR); **C07C 231/14** (2013.01 - US); **C07C 231/24** (2013.01 - KR); **C07C 233/66** (2013.01 - KR); **B01J 21/16** (2013.01 - KR); **B01J 29/7007** (2013.01 - KR); **B01J 31/06** (2013.01 - KR); **B01J 31/08** (2013.01 - KR); **B01J 2219/00051** (2013.01 - US)

C-Set (source: EP)

C07C 231/02 + **C07C 233/66**

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 11834389 B2 20231205; **US 2021387942 A1 20211216**; CN 115836048 A 20230321; EP 4165014 A1 20230419; EP 4165014 B1 20240529; JP 2023529419 A 20230710; KR 20230022885 A 20230216; WO 2021252420 A1 20211216

DOCDB simple family (application)

US 202117323349 A 20210518; CN 202180041677 A 20210608; EP 21736468 A 20210608; JP 2022575417 A 20210608; KR 20227045502 A 20210608; US 2021036296 W 20210608